

**METHOD AND APPARATUS FOR REMOVING ENCAPSULATING MATERIAL FROM
A PACKAGED MICROELECTRONIC DEVICE**

ABSTRACT

A method and apparatus for encapsulating microelectronic devices. In one embodiment, the method includes removing a portion of encapsulating material that at least partially surrounds a microelectronic substrate by directing a source of laser radiation toward the encapsulating material. The method can further include exposing a surface of the microelectronic substrate, for example, to enhance a rate at which heat is transferred away from the microelectronic substrate. Alternatively, the encapsulating material can be removed to form heat transfer structures, such as pins or ribs, also to enhance a rate at which heat is transferred away from the microelectronic substrate. In still another embodiment, a portion of the encapsulating material or a support member to which the substrate is attached can be removed to define interlocking features that allow one microelectronic substrate package to be stacked on another and to resist relative movement between the two packages.